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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,612	03/17/2004	In-duk Hwang	249/453	1923

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EXAMINER

NATARAJAN, VIVEK

ART UNIT	PAPER NUMBER
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3735

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/801,612	Applicant(s) HWANG ET AL.	
	Examiner Vivek Natarajan	Art Unit 3735	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/17/04, 9/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kemeny et al. (US Patent No. 5,039,855) as cited by applicant.
3. Regarding Claims 1 and 3, Kemeny discloses a method of measuring a concentration of a component in a subject comprising: setting an intensity relationship equation between a positive and negative-order beam (see equation at top of col. 13), radiating a light of a first wavelength through an acousto-optic tunable filter to generate said positive and negative-order beams of a second wavelength, sending one beam to the subject and the other beam to a reference, using the measured intensities of the sample and reference beams to calculate the absorbance, and subsequently using the absorbance to calculate the concentration of the component in the subject (col. 2, line 66 – col. 4, line 6).
4. Regarding Claim 4, the method disclosed by Kemeny is executed by a microprocessor.
5. Regarding Claim 5, Kemeny discloses an apparatus (Fig. 3) for performing the aforementioned method steps comprising: a light source 102, an RF signal generator

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306a (see Fig. 11), an acoustic-optic tunable filter 114, first and second light detectors 180, 180a (see Fig. 8), and a signal processor 302 (see Fig. 11).

6. Regarding Claim 6, the apparatus further comprises a condenser lens system 104 between the light source and tunable filter (see Fig. 3).

7. Regarding Claim 7, the light source 102 is a tungsten halogen light bulb (col. 5, lines 66-67).

8. Regarding Claim 8, the photodetectors 180, 180a are made of InGaAs (col. 8, lines 63-64).

9. Regarding Claims 9-10, the acousto-optic tunable filter 114 comprises a piezoelectric transducer 122 and a birefringent crystal (col. 4, line 61 – col. 5, line 16).

10. Regarding Claims 11-12, first and second optical fibers 132a, 132b guide the positive and negative-order beams to the subject and the reference, respectively.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kemeny et al, as cited by applicant. Kemeny discloses a method of measuring a concentration of a component in a subject comprising: setting an intensity relationship equation between a positive and negative-order beam, radiating a light of a first

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wavelength through an acousto-optic tunable filter to generate said positive and negative-order beams of a second wavelength, sending one beam to the subject and the other beam to a reference, using the measured intensities of the sample and reference beams to calculate the absorbance, and subsequently using the absorbance to calculate the concentration of the component in the subject. In Kemeny's method, the input intensities of the sample and reference beams are assumed to be equivalent, so no explicit disclosure is made of performing reference measurements to determine the exact relative intensity of each input beam. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kemeny's method to include steps to determine the relative intensities of the input beams more precisely, since this allows for more accurate measurements.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kemeny et al. as applied to Claim 11 above, and further in view of Messerschmidt (US Patent No. 5,655,530). Kemeny discloses an apparatus for performing the aforementioned method steps comprising: a light source, an RF signal generator, an acoustic-optic tunable filter, first and second light detectors, and a signal processor 302. Kemeny does not disclose that the apparatus comprises a refractive index-matching unit disposed between the optical fiber 132a and the subject. Messerschmidt discloses an apparatus for noninvasively measuring blood analyte concentrations wherein a refractive index-matching medium is placed in contact with the subject (col. 12, lines 10-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus as disclosed by Kemeny et al. to include a

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refractive index-matching unit as taught by Messerschmidt, since this allows for improved accuracy in measuring analyte concentrations.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivek Natarajan whose telephone number is (571)272-6249. The examiner can normally be reached on Mon-Fri, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ali Imam can be reached on (571)272-4737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VN



ERIC F. WINAKUR
PRIMARY EXAMINER